

REMARKS

Reconsideration and allowance of this Application are respectfully requested in light of the foregoing amendments and following remarks.

Typographical Error

At the outset, Applicants wish to thank the Examiner for pointing out that a typographical error was made in the claim listing with regard to original claim 20 in the first Amendment filed by Applicants and inadvertently propagated through all subsequent amendments. The original claim 20, as filed, read as follows:

“A procurement system as recited in claim 19, wherein said special requisition is forwarded to a supplier who provides the desired item, one of said databases being updated with said desired item according to said class, attribute, and value relationships.”

Applicants hereby cancel claim 20 without prejudice and replace it with new claim 26 which reads as did claim 20 as originally filed.

Claim Amendments

Claim 20 has been cancelled because it contained a typographical error and has been replaced with new claim 26. New claim 26 recites the wording of original claim 20 as filed in this Application. No new matter has been added. These amendments to cancel claim 20 and add new claim 26 are being made to correct a typographical error in the claim list of the Amendment filed by Applicants on May 28, 2003, in response to the first Office Action mailed on February 28, 2003.

Claim 19 has been amended to include new claims 17 and 28 such that instant claims 19 and 27 fit within the Examiner's definition of "normally" with regard to accessibility of a master database. Claim 19 originally recited

"... a master database not normally accessible to said buyer..."

and to avoid the negative limitation "not normally" objected to by the Examiner, Claim 19 is amended to read in pertinent part

"...
a master database not accessible to said buyer ..."

and new claim 27 is added which recites

"A procurement system as recited in claim 17, including:
a special requisition identifying the desired item prepared by said buyer using said class, attribute, and value relationships; and
a master database accessible to said buyer including the desired item, said special requisition being used to search for the desired item in said master database."

Support for both can be found at least at page 8, lines 7-17, which disclose that typically, a buyer 22 accesses a standard database but not always. One possible database a buyer may access is a cumulative global database representing all items tracked by back office 24 ... *Different databases may be available depending on the characteristics of the buyer 22* and specific databases may have to be searched before a search is undertaken of a master catalog acting as a cumulative global database. The text of original claim 19 has also been added to the specification by the previous Amendment and provides further support for both amended claim 19 and new claim 27.

New claim 28, dependent from new claim 27, recites the language of original claim 20 but with respect to new claim 28. No new matter has been added by new claim 28.

Thus, claims 19 and 20 recite a master database not accessible to a buyer and claims 27 and 28 recite a master database accessible to a buyer.

Applicants request reconsideration of the 37 C.F.R. 103(a) rejections of the previous Office Action in view of the arguments below and further present herewith two expert Affidavits under 37 C.F.R. 1.132 in support of their arguments below, one by Ted Friel and one by Tom McAlees.

Expert Affidavits

Summary statements follow of some of the contents of two expert Affidavits, including the sources of each of these summary statements.

1. Erickson Teaches a Different Invention (Affidavit of Ted Friel)

Erickson teaches searching both a remote partial or entire replica of a central database and a central database for potential suppliers and sending a request for a bid in a data cast message to the located potential suppliers. It is not inherent in the teachings of Erickson that a buyer not finding an item in a first database results in the buyer searching in a second database for that item, because the buyer is looking for suppliers of types of items and not specific items. *Searching for a supplier of items is not the same as searching for a desired item* as recited by claim 17.

Erickson teaches requesting bids from the located suppliers, whereas the present claimed invention recites sourcing a desired item not in any catalog database normally accessible to a user (claim 19) and adding the item so that it is in one of the catalog databases (claim 20). Erickson neither teaches sourcing nor updating a database with an item not previously found but sourced.

Erickson teaches a system and method for locating suppliers, requesting bids, and receiving bids for subsequent analysis. The present claimed invention teaches sourcing an item by creating a special requisition for a desired item and searching a database for the desired item and then

sourcing the desired item by sending the special requisition to a supplier and adding the item to the database (by its class, attribute and value relationships). Erickson teaches none of this because Erickson teaches a fundamentally different invention for locating suppliers and soliciting bids therefrom.

2. Erickson & IBM Combined Do Not Teach The Present Claimed Invention (Affidavit of Ted Friel)

Erickson does not teach relationships among classifications and therefore a fundamental component of an object class hierarchy is missing from any combined teachings of Erickson with IBM. The alleged combination must be further modified with a reference teaching at least relationships among classifications and how to modify Erickson therewith.

3. There Is No Impedance Mismatch Inherent in Erickson (Affidavit of Ted Friel and Tom McAlees)

Erickson does not teach any kind of database data model, any kind of object for a classification, product, supplier and buyer, and any kind of query language. The IBM reference defines impedance mismatch as one where the data model used in the application is different from that of the data model used in the database (page 4, 2nd paragraph) and there is no inherent difference in the teachings of Erickson. Therefore there is no impedance mismatch inherent in the teaching of Erickson to motivate the combining of Erickson with IBM.

4. The Class, Attribute and Value Relationships of the Present Claimed Invention Do Not An Object or an Object Inheritance Hierarchy Make (Affidavit of Tom McAlees)

The only similarities between an Object Class and the class of the present claimed invention are the use of the terms “class” and “attribute”. The terms “class” and “attribute” are not used in a

similar manner to accepted definitions of these terms for an object-oriented system. Further, the term "class" as disclosed and claimed by the present invention is not used to identify unique data structure or behavior (necessary to define object and an object inheritance hierarchy) since all catalog items are structurally identical and have the same behavior.

5. Object-Oriented Technology Is An Inappropriate Implementation Choice (Affidavit of Tom McAlees)

Erickson is also a transaction oriented system. Neither Erickson nor the present invention teaches Object-Oriented technology for the database or the data model of an application accessing the database and introduction of Object-Oriented technology to Erickson would be an inappropriate solution since it would introduce a great deal of overhead with no recognizable performance benefits. Therefore, one skilled in the art would not be motivated to modify Erickson with IBM.

Examiner's Responses to Applicants' Arguments

The Examiner alleges that a buyer is allowed to access the master catalog database at multiple places in the specification. The rejection of claim 19 has been mooted by the amendment herein of claim 19 and the addition of new claims 27 and 28.

Contrary to the allegation of the Examiner at page 10 lines 10-11 that Erickson also teaches that the information is stored using a class structure in the Object Oriented sense of class structure, citing col. 9, lines 38-49, Applicants assert that Erickson only teaches a *classification* of products and not a class structure, Object Oriented or otherwise. There are no interrelationships between classifications taught or even suggested by Erickson. At the cited location Erickson only teaches that

“In order to help locate companies or products, central database 24 may also contain classifications. ... classification information may comprise a classification ID, a classification description, and other information necessary to identify a particular classification. Company profiles and products may then link to these various classifications in order to identify the classes of goods or services offered by a particular company. In the case of products or services offered by a company, linking them to a class will help locate groups or classes of products or services available in the database.”

Further, contrary to the allegation of the Examiner, almost all commercial databases are relational and are not Object Oriented. The motivation to modify Erickson with the teaching of IBM stated by the Examiner is “for guidance on implementing the database of Erickson” has nothing to do with modifying Erickson to achieve the invention of the present claimed invention of claims 17-25 and, as will be argued subsequently, does not modify Erickson in any way that achieves the present claimed invention.

In the accompanying Affidavits an expert in Object Oriented technology, Tom McAlees, has asserted that the classification taught by Erickson is not an object class nor is an object class inheritance hierarchy the same as the product classification hierarchy of present claim 22.

In his response the Examiner did not address the arguments of Applicants that there is no impedance mismatch inherent in the teachings of Erickson but has now offered a new motivation of "guidance on implementing the database because IBM discusses the benefits that an object-oriented data model provides over a relational data model" to use the IBM reference to modify Erickson. However, based on this irrelevant motivation, the Examiner based his maintenance of the art rejection.

The Examiner responded that the he used the Erickson reference and not OQL to address the special requisition limitation. The following is an exact quote from the Examiner's rejection of claims 19 and 20 which rejection cites IBM's teaching of OQL:

"Erickson does not teach that the requisition uses said class, attribute, and value relationships. However, IBM teaches that object-oriented databases have an Object Query Language (OQL) that allows for searching a database (page 4, paragraph 1). Therefore it would have been obvious to one of ordinary skill in the art, at the time the invention was made, to incorporate OQL of IBM into the system of Erickson. One of ordinary skill in the art would have been motivated to do so in order to efficiently search an object-oriented database." (page 6, line 9 et seq.)

The Examiner did rely on OQL in rejecting claim 19 and Applicants still traverse, responding that OQL is not a structure requisition.

The Examiner further responded that Erickson teaches a special requisition at column 13, lines 30-38 to search the master database for the desired item. At the cited location Erickson only teaches a data cast message that is sent to suppliers to obtain bids from these suppliers and nowhere does Erickson teach or suggest that this data cast message is a special requisition for an item not found in a first database or is a special requisition that is used to search a master database which is

either accessible or not accessible to said buyer. Nowhere does Erickson teach or suggest using the data cast message to search any database by any one of a buyer or supplier or anyone else. Finally, while Erickson teaches the data cast message is forwarded to suppliers, it is forwarded to obtain a bid from the suppliers and not for the purpose of purchasing the item from the supplier. Nowhere does Erickson teach or suggest the supplier provides the desired item (as recited by claims 20 and 28) and especially not at any of the cited locations of (col. 13, lines 30-38; col. 14, line 56- col. 15, line 11; col. 15, lines 30-35).

There is a typographical error in claim 20 which inadvertently included an “l” in front of “one”. All amendments have identified claim 20 as an original claim and the claim as originally filed reads in pertinent part

“...one of said databases being updated...”

and it should was obvious to the Examiner who works with claim language everyday, several times a day, that this was an error. The erroneous language is odd enough that the Examiner remarked on it in his response. Applicants thank the Examiner for pointing out this obvious error and have amended the claims to cancel, without prejudice, claim 20 containing this typographical error and present new claim 26 reciting the identical as-filed claim language. Claim 28 duplicates the claim language of claim 26 with respect to new claim 27.

As the Examiner is not an expert in Object Oriented technology, Applicants present herewith an Affidavit by an expert, Tom McAlees, asserting that the product classification hierarchy of claim 22 is not an object class inheritance hierarchy as taught by IBM and that the class of claims 17-25 is not an object class.

Claim Rejections

Claims 19 stands rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Office Action Position

The Office Action alleges that this claim recites the limitation "...not normally accessible..." and that this is a relative limitation which renders the claim indefinite. The Examiner notes that either a database is accessible or it is not accessible to a user and that the limitation is purely subjective and not defined by the claim or the specification. Furthermore, the Examiner alleges that one of ordinary skill in the art would not be reasonably apprised of the scope of the invention and that for examination purposes, the Examiner assumes that the database is accessible to the user since even a database which is "not normally accessible" is at some point accessible to a user.

Applicants' Response

The rejection has been mooted by the amendment herein of claim 19 and addition of new claims 27 and 28 that conform to the Examiner's definition of a master database that is accessible (claim 19) and is not accessible (claim 27).

Therefore, the rejection should be withdrawn.

2. **Claims 17-20, 22, and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Erickson (U.S. Patent No. 6,014,644) in view of <http://www.research.ibm.com/journals/sj/361/srinivasan.html> “Object persistence in object-oriented applications” hereinafter referred to as IBM**

Office Action Position

With regard to claims 17 and 18, the Office Action alleges that the buyer may search the first or second database to identify suppliers that offer goods of interest to the buyer (Col. 8, lines 28-30, lines 51-67; Col. 12, lines 58 – Col. 13, line 1) and because buyers and suppliers are allowed to add data into the databases (Col. 3, lines 13-42; Col. 7, line 46-Col. 8, line 27) that it is inherent that a first database lacks a desired item in the system of Erickson. The Office Action admits that Erickson does not teach that each unique item stored within the first and second catalog databases is identified with respect to class, attribute, and value relationships but alleges that IBM teaches that Object-oriented database management systems use class, attribute, and value relationships to store and identify items within a database and that it would have been obvious to one of ordinary skill in the art, at the time the invention was made, to incorporate the teachings of IBM into the system of Erickson because one would have been motivated to do so in order to avoid the impedance mismatch that exists with relational data models and databases.

Regarding claims 19 and 20, the Office Action admits that Erickson does not teach a special requisition that uses said class, attribute, and value relationships but alleges that IBM teaches Object Query Language that allows for searching a database. Further, the Office Action admits that Erickson does not teach that the databases are not updated according to said class, attribute, and value relationships but alleges that since Erickson places no restriction on when the buyers and suppliers can add data into the database and that it would have been obvious to one of ordinary skill in the art at the time the invention was made to decide not to update a database.

With regard to claim 22, the Office Action admits that Erickson does not teach that the class relationships are hierarchical among classes but alleges that IBM teaches that inheritance provides for a hierarchy among classes.

With regard to claim 24, the Office Action admits that neither Erickson nor IBM teach that attributes comprise static, differentiating, and dynamic. The Office Action alleges, without providing any motivation therefor, that it would have been obvious to one of ordinary skill in the art to incorporate these features into the cited prior art. Further, the Office Action alleges that Applicants have not disclosed an advantage, use, purpose or problem solved by these attribute types. The Office Action continues, that one of ordinary skill in the art would have expected Applicants' invention to perform equally well with the teachings of the cited prior art because any item has data associated with it which describes the item uniquely and based on all the foregoing, it would have been obvious to one of ordinary skill in this art to modify the cited prior art to obtain the invention as specified in the claims.

Applicants Response

Applicants respectfully traverse.

Erickson teaches a remote and central database, the remote database being part or all of the central database. Replicated and updated remote databases as taught by Erickson may get out of synchronization with the central database. Erickson also teaches that a buyer may search a local database or a central database (col. 8, line 29). However, Erickson nowhere teaches or suggests searching any database and not locating a desired item and then searching another database for the desired item, as recited by claim 17. Erickson teaches searching a remote database for faster access (col. 7, lines 34-36) or a central database to find potential sources and submitting a request for bids to these potential sources.

Applicants assert that there is no teaching or suggestion in the Erickson reference of an object class structure and no teaching of a classification comprising class relationships, attribute relationships and value relationships as recited by present claims 17-25. An expert has asserted in an Affidavit submitted herewith that the class of the present invention is not amenable to being defined as an object and hence there is no motivation to modify any reference with object technology because the present claimed invention does not recite object classes (see Affidavit of Tom McAlees).

Applicants also point out that there is no teaching or suggestion of a relational database anywhere in the cited reference, Erickson, and absent any teaching of object classes for any of classification, product, buyer and supplier data by Erickson and any teaching of a relational database by Erickson there is absolutely no motivation to address a non-existent impedance mismatch by combining IBM with Erickson.

Applicants also point out that Erickson has not identified any problem with the data structure of the database taught by Erickson and therefore there is no motivation whatsoever to change the data structure comprising unrelated classifications of Erickson to the related by class, attribute and value data structure of the present invention, absent the Applicants' claimed invention. The court in *In re Sang Su Lee*, 277 F.3d 1338, (Fed. Cir. 2003) held that there must be some explicit motivation to modify a reference in the prior art itself and that an Applicant's invention cannot be used as a roadmap against applicant, as is being done by the Office Action in making this rejection. The court held that doing so is improper hindsight. This decision is in accord with the Board of Patent Appeals and Interferences decision in *Ex Parte Levensgood*, 28 U.S.P.Q. 2d 1300, 1302 (1993).

And further, as pointed out in the expert affidavit of Ted Friel, Erickson does not teach classification relationships so that neither Erickson alone nor in combination with IBM is sufficient

to achieve the product class relationships of the present invention. The Examiner has admitted that Erickson does not teach attribute and value relationships.

With further regard to claims 17 and 18, the cited combination of references does not overcome the admitted deficiencies of Erickson, namely, that Erickson does not teach that each unique item stored within the first and second catalog databases is identified with respect to class, attribute, and value relationships and with regard to claim 19 that Erickson does not teach a special requisition that uses class, attribute, and value relationships to identify the desired item. It is not sufficient that there is a tool that uses class, attribute and value relationships to store and identify items within a database to motivate combining that tool with Erickson and modifying the data structure and searching method taught therein. This is especially true when there is no data taught by the reference for required class relationships, attribute relationships and value relationships when the reference must teach this data for the modification to be made, i.e., IBM does not teach the relationship data required to modify Erickson and neither does Erickson. Erickson does not teach any classification relationships nor does Erickson suggest that classifications are related.

No problem with the data structure taught by Erickson is either identified by Erickson or has otherwise been identified by the Examiner and noted as being solved by such a modification of Erickson with object technology. Without Applicants' invention as a roadmap there would be no such motivation. Further, because a relational data model is not inherent in the teaching of Erickson there is no impedance mismatch even assuming *arguendo* somehow objects were to be defined for Erickson's database of classification, product, supplier and buyer data. A simple indexed file can suffice as a storage structure of Erickson's data, notwithstanding the Examiner's remark that most commercial databases are implemented using either a relational or an object-oriented data model. To this remark of Examiner Applicants respond that most commercial databases for commercial

systems are implemented using the relational model and Applicants support this assertion by noting the considerable size of the relational database industry vs. the exquisitely small size of the object database industry. Object database technology is a niche technology, not much used in the commercial world and this has been the case for decades. The non-use of Object database technology by the commercial world is well known, well studied and well supported by severe performance penalties that accrue from the use of Object databases in commercial environments. Advances in the speed of technology have not been able to overcome these penalties.

Certainly, as argued above, the alleged motivation to overcome an impedance mismatch between relational data models and databases does not exist in Erickson and therefore does not motivate modifying Erickson to identify each unique item with respect to class, attribute, and value relationships as claimed by claims 17-25. Further, there is no class, attribute and value relationship data either present or inherent in Erickson that could be used to accomplish such a modification of Erickson and no problem identified by Erickson that such a modification would overcome.

For all the foregoing reasons the Examiner has failed to make out a *prima facie* case of obviousness and the rejection of claims 17-20, now 17-19 and 26 should be withdrawn.

Regarding present claim 26, as explained above in the section entitled *Claims*, original claim 20 has been cancelled without prejudice and replaced with new claims 26-28 such that claim 26 dependent from claim 19 is identical to the originally as-filed language of claim 20 as is claim 28 which depends from new claim 27, claim 28 being a counterpart to claim 26 but with respect to new claim 17. The rejection of claim 20 is mooted by these amendments.

Applicants' respectfully assert and are supported by Tom McAlees' expert affidavit included herewith, that with regard to claim 22, an object inheritance hierarchy is not equivalent to the hierarchy among catalog classes, as disclosed and claimed by Applicants. An Object class as taught

by the cited IBM reference, is a general construct comprising *inter alia* data definition and methods (behavior) whereas a class of the disclosed and claimed invention is a unique data set including an ID describing a specific catalog category for a product, e.g., 'Gases' as a class (catalog category) having related subclasses of 'Airgas Specialty Gases' and 'Gases in Lecture Bottles'. The class of claim 22 is not a general construct for defining data and methods (behavior) as taught by IBM. The Examiner is confusing a general construct, Object class, for defining data, methods (behavior) and an inheritance hierarchy with data of a single type, i.e., product, arranged in a hierarchical product classification. Applicants assert that one ordinarily skilled in the art would realize they are not the same and are not equivalent, see expert affidavit of Tom McAlees. The motivation alleged by the Office Action to incorporate the teachings of IBM into the system of Erickson, namely, to efficiently search and maintain an object-oriented database is irrelevant to motivate modifying Erickson's non-hierarchical and non-related classification data structure to include classification relationships that are hierarchical among classifications and the rejection of claim 22 should be withdrawn. Nowhere does Erickson teach a hierarchy of catalog classifications so that modifying Erickson's data structure to achieve a hierarchy would not be useful, i.e., would not make Erickson more efficient since a hierarchy has no use in the teachings of Erickson, and is therefore not motivated. Erickson only teaches identifying each product by a unique ID so that at most Erickson implies an index of these unique IDs to aid search. The Examiner has failed to make out a *prima facie* case of obviousness and the rejection of claim 22 should be withdrawn.

Regarding claim 24, contrary to the allegation of the Office Action that Applicants have not disclosed that static, differentiating, and dynamic attributes provide an advantage, are used for a particular purpose or solve a stated problem, Applicants have defined a Stock Keeping Unit (SKU) as a unique identifier for an item based on its differentiating attributes. The advantage of the

differentiating attributes is that together they form a unique ID for an item and this is expressly defined on page 9, line 23 to page 10, line 4. Differentiating among products certainly is useful to both buyer and supplier. Applicants teach that intrinsic properties do not vary based on SKU, they do not contribute to an item's unique ID but are still used to describe characteristics of an item. Intrinsic properties are useful to both buyers and suppliers when searching for items because they provide differentiation not based on SKU. Dynamic attributes are associated with an item at buy time, e.g., such as price and quantity on hand, and keeping a price current and providing a quantity on hand certainly are useful to a buyer as well as a supplier and do not have to be disclosed since their advantages would be obvious to one ordinarily skilled in the art, e.g., to ordinary buyers and suppliers. The advantages of differentiating, dynamic, and static attributes derive from their definitions (provided in Applicants specification as explained above) and their obvious use by suppliers to describe their products and by buyers to search for and select products.

Further, Applicants assert that, contrary to the allegation of the Office Action, one of ordinary skill in the art would not expect Applicants' invention to perform equally well with the teachings of the cited prior art because only unique IDs are taught in the cited prior art and one skilled in the art would assume that there is always an advantage in having more detailed information about an item in order to make an informed purchase decision. Therefore, assuming that the additional information provided by Applicants' intrinsic and dynamic attributes is non-trivially related to a buying decision, i.e., these types of attributes are useful, and since there is no motivation in the prior art to include these useful attributes in the cited prior art, the rejection of claim 24 should be withdrawn.

Finally, Applicants assert that each of these allegations of the Office Action is impermissible hindsight, examples of using the Applicants' invention as a roadmap against Applicants. The court in *In re Sang Su Lee, supra*, held this is impermissible hindsight and that cited references must

contain a specific motivation to combine cited references and there is none here. The only problem identified in the prior art of Erickson is keeping the local databases synchronized with the central database. Modifying the data structure of Erickson with IBM, as suggested by the Office Action, does not solve this problem. Erickson has not identified any problem with the structure of classification data taught therein and most specifically Erickson has not taught a relational database, so that overcoming an impedance mismatch therewith using IBM is also not motivated. Therefore, the Office Action has failed to make out a *prima facie* case of obviousness with regard to claims 17-20, 22, and 24 (new claim 26 being identical to and replacing claim 20) and the rejections of these claims should be withdrawn. Claims 17-19, 26, 22, and 24 are therefore allowable.

Therefore, in view of all the above discussions, neither Erickson nor IBM, alone or in combination, can be relevant prior art for the present claimed invention, the Office Action has not established a *prima facie* case of obviousness and the rejections of claim 17-20, 22, and 24 should be withdrawn. Claim 17 is allowable and claims 18-25, dependent therefrom are allowable for at least this reason.

3.0 Claim 21, 23, and 25 are rejected under 35 U.S.C. 103(a) as being Unpatentable over Erickson (US Patent 6,014,644) in view of <http://www.research.ibm.com/journal/sj/361/srinivasan.html> "Object persistence in object-oriented applications" hereinafter referred to as IBM and further in view of Official Notice.

Applicants' Response


Claims 21, 23, and 25 all depend from allowable claim 17 and are allowable for at least this reason.

Conclusion

In view of the foregoing remarks, all stated objections and rejections of the Office Action have been overcome and this Application is in condition for allowance. Early notice to that effect is earnestly solicited.

If any issues remain which may be best resolved through a telephone communication, the Examiner is requested to kindly telephone the undersigned at the local, Washington D.C. telephone number listed below.

Respectfully submitted,

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